

# **HIGH BEARING-STRENGTH STEEL PARTS AND PROCESSES FOR THE PRODUCTION THEREOF**

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**Inventor:** TAKAYAMA TAKEMORI (JP); HAMASAKA NAOJI (JP)

**Applicant:** KOMATSU MFG CO LTD (JP)

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## **Abstract of EP0950723**

High surface pressure resistant steel parts and their producing methods are disclosed. These steel parts are useful as gears, cams, bearings and similar high-strength compact steel articles which are required to have wear resistance and strength to withstand fatigue in rolling or rolling-slipping applications. In a steel part formed according to the invention, a fine nitride and/or carbonitride having at least an average grain size of 0.3  $\mu\text{m}$  or less is dispersed in the contact surface structure; a multi phase structure composed of martensite, which is divided into extremely fine pieces, forming a disordered shape, by the nitride and/or carbonitride, is formed; and a carbide having a grain size of 3  $\mu\text{m}$  or less is dispersed to increase the hardness of the surface. Such a steel part is produced by carrying out carbonitriding or carburization/carbonitriding so as to precipitate extremely fine  $\text{AlN}$ , using nitrogen permeating from the surface and by carrying out quenching or quenching/tempering, starting from a temperature region where the parent phase is austenite

**FIG. 3**



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